

*a*  
*Sub 227*  
~~WHAT IS CLAIMED IS:~~

*CLAIMED*  
1. A developer carrying member comprising a substrate, and a conductive coat layer that covers the surface of the substrate, wherein;

5           said conductive coat layer contains at least a binder resin and conductive spherical particles having a number average particle diameter of from 0.3  $\mu\text{m}$  to 30  $\mu\text{m}$  and a true density of 3  $\text{g/cm}^3$  or below, dispersed in the binder resin.

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2. The developer carrying member according to claim 1, wherein said conductive spherical particles have a number average particle diameter of from 2  $\mu\text{m}$  to 20  $\mu\text{m}$ .

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3. The developer carrying member according to claim 1, wherein said conductive spherical particles have a true density of from 0.9  $\text{g/cm}^3$  to 2.7  $\text{g/cm}^3$ .

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4. The developer carrying member according to claim 1, wherein said conductive spherical particles have a major axis/minor axis ratio in the range of from 1.0 to 1.5.

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5. The developer carrying member according to claim 1, wherein said conductive spherical particles have a volume resistivity of  $10^6 \Omega \cdot \text{cm}$  or below.

*15*

6. The developer carrying member according to claim 1, wherein said conductive spherical particles comprise carbon particles.

5 *Sub a3* 7. ~~The developer carrying member according to claim 6, wherein the surfaces of said carbon particles are coated with a conductive metal or a conductive metal oxide, or both of them.~~

10 8. The developer carrying member according to claim 1, wherein said conductive spherical particles comprise particles whose surfaces have been subjected to conductive treatment.

15 9. The developer carrying member according to claim 1, wherein said conductive spherical particles comprise resin particles with conductive fine particles dispersed therein.

20 *Sub a4* 10. ~~The developer carrying member according to claim 1, wherein said conductive spherical particles further contain a lubricating material in addition to said conductive spherical particles.~~

25 11. The developer carrying member according to claim 10, wherein said lubricating material comprises a member selected from the group consisting of graphite,

molybdenum disulfide, boron nitride, mica, graphite fluoride, silver-niobium selenide, calcium chloride-graphite, talc, and a fatty acid metal salt.

5           12. The developer carrying member according to claim 10, wherein said lubricating material has a number average particle diameter of from 0.2  $\mu\text{m}$  to 20  $\mu\text{m}$ .

10           <sup>15</sup>  
~~13.~~ The developer carrying member according to claim 1, wherein said conductive coat layer has a volume resistivity of  $10^3 \Omega \cdot \text{cm}$  or below.

15           <sup>16</sup>  
~~14.~~ The developer carrying member according to claim 1, wherein said conductive coat layer has a volume resistivity of from  $10^3 \Omega \cdot \text{cm}$  to  $10^{-2} \Omega \cdot \text{cm}$ .

20           <sup>17</sup>  
~~15.~~ The developer carrying member according to claim 1, wherein said conductive coat layer further contains conductive fine particles in addition to said conductive spherical particles.

<sup>sub 95</sup>  
25           ~~16.~~ The developer carrying member according to claim 15, wherein said conductive fine particles comprises at least one member selected from the group consisting of carbon black, a metal oxide, a metal and an inorganic filler.

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~~17.~~ The developer carrying member according to  
claim 1, wherein said conductive spherical particles  
are contained in the conductive coat layer in an amount  
of from 2 parts by weight to 120 parts by weight based  
5 on 100 parts by weight of said binder resin.

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~~18.~~ The developer carrying member according to  
claim 1, wherein said conductive spherical particles  
are contained in the conductive coat layer in an amount  
10 of from 2 parts by weight to 80 parts by weight based  
on 100 parts by weight of said binder resin.

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~~19.~~ The developer carrying member according to  
claim 10, wherein said lubricating material is  
15 contained in the conductive coat layer in an amount of  
from 5 parts by weight to 120 parts by weight based on  
100 parts by weight of said binder resin.

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~~20.~~ The developer carrying member according to  
20 claim 10, wherein said lubricating material is  
contained in the conductive coat layer in an amount of  
from 10 parts by weight to 100 parts by weight based on  
100 parts by weight of said binder resin.

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21. The developer carrying member according to  
25 claim ~~18~~ 17, wherein said conductive fine particles are  
contained in the conductive coat layer in an amount not

more than 40 parts by weight based on 100 parts by weight of said binder resin.

*Sub G6* 22. The developer carrying member according to  
5 claim 15, wherein said conductive fine particles are contained in the conductive coat layer in an amount of from 2 parts by weight to 35 parts by weight to 100 parts by weight based on 100 parts by weight of said binder resin.

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23. The developer carrying member according to claim 1, wherein the surface of said conductive coat layer has a center-line average height Ra of from 0.2  $\mu\text{m}$  to 4.5  $\mu\text{m}$ .

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24. The developer carrying member according to claim 1, wherein the surface of said conductive coat layer has a center-line average height Ra of from 0.4  $\mu\text{m}$  to 3.5  $\mu\text{m}$ .

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~~25.~~ A developing assembly comprising:

a developer container holding a developer; and a developer carrying member for carrying the developer held in the developer container and for transporting  
25 the developer to the developing zone;

wherein said developer carrying member comprises a substrate, and a conductive coat layer that covers

*Subgraph cancelled*  
the surface of the substrate, and the conductive coat layer contains at least a binder resin and conductive spherical particles having a number average particle diameter of from 0.3  $\mu\text{m}$  to 30  $\mu\text{m}$  and a true density of 3 g/cm<sup>3</sup> or below, dispersed in the binder resin.

26. The developing assembly according to claim 25, which further comprises a developer layer thickness control member for forming a thin layer of the developer on said developer carrying member.

<sup>28</sup>  
~~27~~ 27. The developing assembly according to claim ~~26~~, wherein said developer layer thickness control member is a magnetic control blade.

<sup>29</sup>  
~~27~~ 28. The developing assembly according to claim ~~26~~, wherein said developer layer thickness control member is elastically brought into press-contact touch with said developer carrying member through said developer.

<sup>30</sup>  
~~29~~ 29. The developing assembly according to claim ~~28~~, wherein said developer layer thickness control member is an elastic control member.

<sup>33</sup>  
~~26~~ 30. The developing assembly according to claim ~~25~~, wherein said developer is a magnetic one component

type developer comprising a magnetic toner.

<sup>34</sup>  
~~26~~ <sup>31</sup> The developing assembly according to claim  
~~25~~, wherein said developer is a non-magnetic one  
5 component type developer comprising a non-magnetic  
toner.

<sup>35</sup>  
~~26~~ <sup>32</sup> The developing assembly according to claim  
~~25~~, wherein said developer is a two component type  
10 developer comprising a toner and a carrier.

~~33. The developing assembly according to claim  
25, wherein said developer carrying member is the  
developer carrying member according to any one of  
15 claims 2 to 24.~~

~~Sub-art 34 An image forming apparatus comprising:  
a latent image bearing member for bearing an  
electrostatic latent image, and a developing assembly  
20 for developing the electrostatic latent image to form a  
developed image;  
said developing assembly comprising:  
a developer container holding a developer; and  
a developer carrying member for carrying the  
25 developer held in the developer container and for  
transporting the developer to the developing zone;  
wherein said developer carrying member comprises~~

*Sub-  
conclusion*

a substrate, and a conductive coat layer that covers the surface of the substrate, and the conductive coat layer contains at least a binder resin and conductive spherical particles having a number average particle diameter of from 0.3  $\mu\text{m}$  to 30  $\mu\text{m}$  and a true density of 3 g/cm<sup>3</sup> or below, dispersed in the binder resin.

35. The image forming apparatus according to claim 34, which further comprises a developer layer thickness control member for forming a thin layer of the developer on said developer carrying member.

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~~36~~  
<sup>63</sup>  
~~35~~ The image forming apparatus according to claim ~~35~~, wherein said developer layer thickness control member is a magnetic control blade.

<sup>65</sup>  
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<sup>63</sup>  
~~35~~ The image forming apparatus according to claim ~~35~~, wherein said developer layer thickness control member is elastically brought into press-contact with said developer carrying member through said developer.

<sup>66</sup>  
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<sup>65</sup>  
~~37~~ The image forming apparatus according to claim ~~37~~, wherein said developer layer thickness control member is an elastic control member.

<sup>69</sup>  
~~39~~ The image forming apparatus according to



<sup>62</sup>  
~~40~~ claim ~~34~~, wherein said developer is a magnetic one component type developer comprising a magnetic toner.

<sup>70</sup>  
~~40~~ 5 claim ~~34~~, wherein said developer is a non-magnetic one component type developer comprising a non-magnetic toner.

<sup>763</sup>  
~~41~~ 10 claim ~~34~~, wherein said developer is a two component type developer comprising a toner and a carrier.

<sup>721</sup>  
~~42~~ 15 claim ~~34~~, wherein said latent image bearing member is an electrophotographic photosensitive member.

~~Int-48~~ 20 43. The image forming apparatus according to claim 34, which further comprises a transfer means for transferring said developed image to a recording medium.

44. The image forming apparatus according to claim 34, which further comprises a fixing means for fixing said developed image to a recording medium.

25 45. The image forming apparatus according to claim 34, wherein said developer carrying member is the

developer carrying member according to any one of  
claims 2 to 24.

*Incl 99*  
5 ~~46.~~ A process cartridge detachably mountable on  
a main assembly of an image forming apparatus,  
comprising:

a latent image bearing member for bearing an  
electrostatic latent image, and a developing means for  
developing the electrostatic latent image;

10 said developing means comprising;

a developer; and

a developer carrying member for carrying and  
transporting the developer to the developing zone;

wherein said developer carrying member comprises  
15 a substrate, and a conductive coat layer that covers  
the surface of the substrate, and the conductive coat  
layer contains at least a binder resin and conductive  
spherical particles having a number average particle  
diameter of from 0.3  $\mu\text{m}$  to 30  $\mu\text{m}$  and a true density of  
20 3 g/cm<sup>3</sup> or below, dispersed in the binder resin.

47. The process cartridge according to claim  
46, which further comprises a developer layer thickness  
control member for forming a thin layer of the  
25 developer on said developer carrying member.

*103*  
~~48.~~

The process cartridge according to claim

*24*

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wherein said developer layer thickness control member is a magnetic control blade.

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5 The process cartridge according to claim wherein said developer layer thickness control member is elastically brought into pressure touch with said developer carrying member through said developer.

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10 The process cartridge according to claim wherein said developer layer thickness control member is an elastic control member.

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15 The process cartridge according to claim wherein said developer is a magnetic one component type developer comprising a magnetic toner.

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20 The process cartridge according to claim wherein said developer is a non-magnetic one component type developer comprising a non-magnetic toner.

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25 The process cartridge according to claim wherein said developer is a two component type developer comprising a toner and a carrier.

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~~46~~

wherein said latent image bearing member is an

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electrophotographic photosensitive member.

*add all* 55. The process cartridge according to claim  
46, which further comprises at least one of a cleaning  
5 means and a primary charging means, joined into one  
unit as the cartridge in addition to said latent image  
bearing member and said primary charging member; said  
latent image bearing member comprising an  
electrophotographic photosensitive member.

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56. The process cartridge according to claim  
46, wherein said ~~developer carrying member~~ is the  
developer carrying member according to any one of  
claims 2 to 24.

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*add all*  
*C5*

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